

Corrected Seq. Listing.2004.08.31 SEQUENCE LISTING

<110> Hillman, Jeffrey

<120> Antimicrobial Polypeptide, Nucleic Acid, and Methods of Use

<130> 00-1323H

<140> US 10/013,036 <141> 2001-10-30

<150> 09/361,900

1999-07-27 <151>

08/871,924 <150>

<151> 1997-06-10

<160> 12

<170> PatentIn version 3.1

<210> 1

<211> 1316

<212> DNA

<213> Streptococcus mutans

<220>

<221> CDS

<222> (796)..(987)

<223>

<220>

<221> -35_signal

<222> (738)..(742)

<220>
<221> -10_signal
<222> (757)..(763)
<223>

<221> RBS

<222> (784)..(791)

<223>

60 aatctatttt gtagagaatt tagagaaatt attaaattac caagatatgt ttgcaataac 120 atttttaaaa tttttaaaaa aaattattac ttactttcat gataagtcag tagatatgtc 180 tgaattagaa cattatatta atatagttga agaaataaat cctacgattg cttcaattct 240 taaatctaat ttgaatcagc ttttataaag ttttagccat taaagccatc ttgataaatt 300 ttatatcttt catattcatt aaatgtggag ataatgaaaa agcaacggtt atgctatcgc tgcttttttt gtgattagaa gctatgttat catggagtta tagtaatgaa acatagtgac 360 420 agttcatcct ttcttattat aaaagtggta ataagagaag tggtaaacaa agagttagta 480 aaataatacg tttaaccata atatttcctc ctttaattta ttataagatt caaaaaggta 540 atattcctat atttgcaaat atgggataaa ataattttaa aaaagcagat ttgcaatttt 600 aaaaaaatag aggctaatgg tggtattata ttattgtaaa tatatgttta ctcagtaata 660 gtgatttact attacaacag attttgttgt tatcttagat atttctgcta gcattagtta 720 tctgtagatg tactacttaa taagtatata attataatta tataataact attatcagat 780 taccgttaaa agttttctga tatgcttcta ctgaacaatt tatgttcagt tacacacatg 831 aaaaaqqaqq atatt atq tca aac aca caa tta tta qaa qtc ctt qqt act Met Ser Asn Thr Gln Leu Leu Glu Val Leu Gly Thr 879 gaa act ttt gat gtt caa gaa gat ctc ttt gct ttt gat aca aca gat Glu Thr Phe Asp Val Gln Glu Asp Leu Phe Ala Phe Asp Thr Thr Asp 927 act act att gtg gca agc aac gac gat cca gat act cgt ttc aaa agt Thr Thr Ile Val Ala Ser Asn Asp Asp Pro Asp Thr Arg Phe Lys Ser 30 Page 2

tgg agc ctt tgt acg cct ggt tgt gca agg aca ggt agt ttc aat agt Trp Ser Leu Cys Thr Pro Gly Cys Ala Arg Thr Gly Ser Phe Asn Ser 45 50 55 60	975					
tac tgt tgc tga ttgtataaaa gatttagatt gtgccgcatg ttagcggcac Tyr Cys Cys	1027					
aatcttttga tattagaggt attaatatgt taaatacaca attattagaa gtccttggta	1087					
ctaaaacttt tgatgttcaa gaagatttat ttgagtttaa tataacagat actattgtac	1147					
tgcaggctag tgatagtcca gatactcata gtaggggtcc cgagcgctta gtgggaattt	1207					
gtatcgataa ggggtacaaa ttcccactaa accaatgttt caaggcctat ttattttta	1267					
tattcaattc tcttaagtgt ttaggaatag ataacaagtc aaatttata						
210 2						
<210> 2						
<211> 63						
<212> PRT						
<213> Streptococcus mutans						
<400> 2						
Met Ser Asn Thr Gln Leu Leu Glu Val Leu Gly Thr Glu Thr Phe Asp 1 15 15						
Val Gln Glu Asp Leu Phe Ala Phe Asp Thr Thr Asp Thr Thr Ile Val 20 25 30						
Ala Ser Asn Asp Asp Pro Asp Thr Arg Phe Lys Ser Trp Ser Leu Cys						
35 40 45						
Thr Pro Gly Cys Ala Arg Thr Gly Ser Phe Asn Ser Tyr Cys Cys 50 55 60						
<210> 3						
<211> 1323						
<212> DNA						
<213> Streptococcus mutans						
<220>						
<221> CDS						

<222> (228)..(782)

<223> <220> <221> -35_signal <222> (177)..(182)<223> <220> -10_signal <221> (191)..(196)<222> <223> <220> <221> RBS <222> (218)..(224)<223> <400> 3 60 tagtaaagtg ggtagtttca atatctgccc tcctcgaaag atctccgtca gtttcaatag ttactgttgt taactataaa ttatacttaa attgatagga aacttggtcg tgacattatc 120 180 atatgttgat attggaagag aatcaaattt ataaagacaa ttaaatctaa atttgatgaa 236 tatttagatg aattattact aggttgacag tcatgttagg agaagag atg aac gat Met Asn Asp 284 ttt caa ttt caa gat tat ttt atg tac aga aaa cca tta ggc aac ttt Phe Gln Phe Gln Asp Tyr Phe Met Tyr Arg Lys Pro Leu Gly Asn Phe 10 332 tct aat ttt ttt agt ata act gat acg atg gat ccc att gag tta cta Ser Asn Phe Phe Ser Ile Thr Asp Thr Met Asp Pro Ile Glu Leu Leu 35 20 380 cat agt gat ccg ata ttt gct gaa gga gta tat ttg gcc tct tca tct His Ser Asp Pro Ile Phe Ala Glu Gly Val Tyr Leu Ala Ser Ser Ser 50 40 428 ctt aga gca gcc ata aat aaa ctt aag aat cat act gcg agt act aag Leu Arg Ala Ala Ile Asn Lys Leu Lys Asn His Thr Ala Ser Thr Lys 476 gat aaa aag aat gca aga gag act att ttt caa tac tat gcc cgt tat

Page 4

Asp	Lys	Lys	Asn	Ala	Arg	Co Glu	Thr	ted Ile	Seq. Phe	Lis Gln	ting Tyr	.200 Tyr	4.08 Ala	.31 Arg	Tyr	
aac	aca	70	tca	act	cca	† ††	75 aac	tta	ttt	tca	tcc	atc	aga	gta	aat	524
Asn	Thr 85	Arg	Ser	Thr	Pro	Phe 90	Gly	Leu	Phe	Ser	Ser 95	Ile	ĞÎÿ	val	Ğİÿ	3-
gct Ala 100	ttt Phe	tcg Ser	gct Ala	tac Tyr	ctt Leu 105	aaa Lys	aaa Lys	gaa Glu	aag Lys	tct Ser 110	cgt Arg	tat Tyr	gaa Glu	aaa Lys	tct Ser 115	572
att Ile	aat Asn	att Ile	gat Asp	ctt Leu 120	ttt Phe	tgg Trp	gct Ala	tat Tyr	aaa Lys 125	gta Val	gca Ala	gat Asp	aaa Lys	cta Leu 130	gaa Glu	620
														aat Asn		668
ttg Leu	caa Gln	aag Lys 150	tca Ser	gat Asp	aat Asn	ttt Phe	tgg Trp 155	ctt Leu	ttg Leu	gat Asp	acg Thr	cga Arg 160	agt Ser	cat His	ttt Phe	716
ggt Gly	ctt Leu 165	atg Met	aat Asn	tct Ser	ttt Phe	cat His 170	ttt Phe	atc Ile	ttg Leu	tac Tyr	gac Asp 175	ttc Phe	tat Tyr	tct Ser	ttc Phe	764
ctt Leu 180	_	_	aga Arg		taa	gaat	tgat	at a	atcag	gctgg	ja tt	caca	accaç	3		812
aaat	cacgo	gct a	agctt	gaco	a at	agtt	tctg	ggt	taat	ttt	ctta	ıaat1	tc 1	tgacg	tgctt	872
cggt	cgca	aat a	agaat	caat	g go	atco	caat	cga	atatt	ctt	agga	atto	ga g	gctcg	gtacc	932
cggg	ggato	ct	ctaga	gtcg	ja co	tgca	aggca	ı tgo	caago	ttg	gcac	tgg	cg 1	tcgtt	ttaca	992
acgt	cgt	gac 1	tggga	aaaa	c ct	ggcg	jttac	cca	actt	aat	cgcc	ttg	cag o	cacat	ccccc	1052
ttt	gcca	agc 1	ggcg	gtaat	a go	gaag	gaggo	ccg	gcaco	gat	cgcc	ctt	cc a	aacag	ttgcg	1112
cago	ctga	aat g	ggcga	atgg	jc go	ctga	atgcg	gta	atttt	ctc	ctta	cgca	atc 1	tgtgc	ggtat	1172
ttca	acaco	gc a	atato	gtgc	a ct	ctca	agtac	aat	ctg	tct	gato	ccg	cat a	agtta	agcca	1232
gcc	cgac	cac o	cgc	caaca	ic co	gctg	gacgo	gco	ctga	ıcgg	gctt	gtct	tgc 1	tcccg	gcatc	1292
cgct	taca	aga d	caago	tgtg	ja co	gtct	ccgg	g								1323
<210)> 4	1 ·														
<211	L>]	L84														
~ -																

<212> PRT

<213> Streptococcus mutans

<400> 4

Met Asn Asp Phe Gln Phe Gln Asp Tyr Phe Met Tyr Arg Lys Pro Leu Page 5

1

5

Gly Asn Phe Ser Asn Phe Phe Ser Ile Thr Asp Thr Met Asp Pro Ile 20 25 30

Glu Leu Leu His Ser Asp Pro Ile Phe Ala Glu Gly Val Tyr Leu Ala 35 40 45

Ser Ser Ser Leu Arg Ala Ala Ile Asn Lys Leu Lys Asn His Thr Ala 50 55 60

Ser Thr Lys Asp Lys Lys Asn Ala Arg Glu Thr Ile Phe Gln Tyr Tyr 65 70 75 80

Ala Arg Tyr Asn Thr Arg Ser Thr Pro Phe Gly Leu Phe Ser Ser Ile 85 90 95

Gly Val Gly Ala Phe Ser Ala Tyr Leu Lys Lys Glu Lys Ser Arg Tyr 100 105 110

Glu Lys Ser Ile Asn Ile Asp Leu Phe Trp Ala Tyr Lys Val Ala Asp 115 120 125

Lys Leu Glu Ser Met Pro Glu Ile Leu Asn Thr Leu Lys Val Val Ala 130 135 140

Asn Asn Ala Leu Gln Lys Ser Asp Asn Phe Trp Leu Leu Asp Thr Arg 145 150 155 160

Ser His Phe Gly Leu Met Asn Ser Phe His Phe Ile Leu Tyr Asp Phe 165 170 175

Tyr Ser Phe Leu Gln Asp Arg Pro 180

<210> 5

<211> 22

<212> PRT

<213> Streptococcus mutans

<220>

<221> MISC_FEATURE

<222> (3)..(3)

```
Corrected Seq. Listing.2004.08.31
<223> 2,3-didehydroalanine
<220>
<221>
      MISC_FEATURE
<222> (5)..(5)
<223> alanyl moiety of lanthionine
<220>
<221>
      MISC_FEATURE
<222>
     (7)..(7)
<223> alanyl moiety of lanthionine
<220>
<221>
     MISC_FEATURE
<222> (11)..(11)
<223> alanyl moiety of lanthionine
<220>
<221>
     MISC_FEATURE
<222> (16)..(16)
<223> alanyl moiety of lanthionine
<220>
      MISC_FEATURE
<221>
<222>
      (19)..(19)
<223> alanyl moiety of lanthionine
<220>
<221>
      MISC_FEATURE
<222>
      (21)..(21)
      alanyl moiety of lanthionine
```

<220> <221> MISC_FEATURE <222> (8)..(8) <223> 2,3-didehydrobutyrine <220> <221> MISC_FEATURE <222> (14)..(14) <223> S-2-aminobutyric acid <220> <221> MISC_FEATURE <222> (22)..(22) <223> S-[aminovinyl]-cysteine <220> <221> THIOETH (5)..(7) <222> <223> <220> <221> THIOETH (11)..(14) <222> <223> <220>

<221> THIOETH

<222> (16)..(21)

<223>

<220>

```
Corrected Seq. Listing.2004.08.31
<221>
       THIOETH
<222>
       (19)..(22)
<223>
<400> 5
Phe Lys Xaa Trp Xaa Leu Xaa Xaa Pro Gly Xaa Ala Arg Xaa Gly Xaa 1 1 15
Phe Asn Xaa Tyr Xaa Xaa 20
<210> 6
<211>
       22
<212> PRT
<213> Streptococcus mutans
<220>
<221>
       MISC_FEATURE
      (3)..(3)
<222>
<223> alanyl moiety of lanthionine
<220>
<222> (5)..(5)
<223> 2,3-didehydroalanine
<220>
<221>
      MISC_FEATURE
<222>
      (7)..(7)
<223> alanyl moiety of lanthionine
<220>
```

<221>

MISC_FEATURE

<222> (11)..(11)

<223> alanyl moiety of lanthionine

<220>

<221> MISC_FEATURE

<222> (16)..(16)

<223> alanyl moiety of lanthionine

<220>

<221> MISC_FEATURE

<222> (19)..(19)

<223> alanyl moiety of lanthionine

<220>

<221> MISC_FEATURE

<222> (21)..(21)

<223> alanyl moiety of lanthionine

<220>

<221> MISC_FEATURE

<222> (8)..(8)

<223> S-2-aminobutyric acid

<220>

<221> MISC_FEATURE

<222> (14)..(14)

<223> 2,3-didehydrobutyrine

<220>

<221> MISC_FEATURE

<222> (22)..(22)

<223> S-[aminovinyl]-cysteine

```
<220>
<221>
       THIOETH
      (3)..(7)
<222>
<223>
<220>
<221>
      THIOETH
      (8)..(11)
<222>
<223>
<220>
<221>
       THIOETH
      (16)..(21)
<222>
<223>
<220>
<221>
       THIOETH
      (19)..(22)
<222>
<223>
<400> 6
Phe Lys Xaa Trp Xaa Leu Xaa Xaa Pro Gly Xaa Ala Arg Xaa Gly Xaa 1 5 10 15
Phe Asn Xaa Tyr Xaa Xaa 20
<210> 7
<211> 22
<212>
      PRT
<213> Streptococcus mutans
```

<220>

- <221> MISC_FEATURE (3)..(3)<222> <223> alanyl moiety of lanthionine <220> <221> MISC_FEATURE <222> (7)..(7) <223> alanyl moiety of lanthionine <220> <221> MISC_FEATURE <222> (11)..(11) <223> alanyl moiety of lanthionine <220> <221> MISC_FEATURE (16)..(16)<222> <223> alanyl moiety of lanthionine <220> <221> MISC_FEATURE <222> (19)..(19)<223> alanyl moiety of lanthionine <220> <221> MISC_FEATURE <222> (21)..(21)<223> alanyl moiety of lanthionine
- <220>

<221> MISC_FEATURE

```
Corrected Seq. Listing.2004.08.31
```

- <222> (5)..(5)
- <223> 2,3-didehydroalanine
- <220>
- <221> MISC_FEATURE
- <222> (8)..(8)
- <223> S-2-aminobutyric acid
- <220>
- <221> MISC_FEATURE
- <222> (14)..(14)
- <223> 2,3-didehydrobutyrine
- <220>
- <221> MISC_FEATURE
- <222> (22)..(22)
- <223> S-[aminovinyl]-cysteine
- <220>
- <221> THIOETH
- <222> (3)..(7)
- <223>
- <220>
- <221> THIOETH
- <222> (8)..(11)
- <223>
- <220>
- <221> THIOETH
- <222> (16)..(21)
- <223>

```
<220>
<221>
       THIOETH
       (19)..(22)
<222>
<223>
<400> 7
Phe Lys Xaa Trp Xaa Leu Xaa Xaa Pro Gly Xaa Ala Lys Xaa Gly Xaa 1 1 5 15
Phe Asn Xaa Tyr Xaa Xaa 20
<210> 8
<211>
       22
<212>
       PRT
<213>
       Streptococcus mutans
<220>
<221>
       MISC_FEATURE
       (3)..(3)
<222>
<223> alanyl moiety of lanthionine
<220>
<221>
      MISC_FEATURE
<222>
      (7)..(7)
<223> alanyl moiety of lanthionine
<220>
<221>
      MISC_FEATURE
      (11)..(11)
<222>
<223> alanyl moiety of lanthionine
```

<220>

<221> MISC_FEATURE

<222> (16)..(16)

<223> alanyl moiety of lanthionine

<220>

<221> MISC_FEATURE

<222> (21)..(21)

<223> alanyl moiety of lanthionine

<220>

<221> MISC_FEATURE

<222> (5)..(5)

<223> 2,3-didehydroalanine

<220>

<221> MISC_FEATURE

<222> (19)..(19)

<223> 2,3-didehydroalanine

<220>

<221> MISC_FEATURE

<222> (8)..(8)

<223> S-2-aminobutyric acid

<220>

<221> MISC_FEATURE

<222> (14)..(14)

<223> 2,3-didehydrobutyrine

<220>

<221> MISC_FEATURE

<222> (22)..(22)

<223> S-[aminovinyl]-cysteine

<220>

<221> THIOETH

<222> (3)..(7)

<223>

<220>

<221> THIOETH

<222> (8)..(11)

<223>

<220>

<221> THIOETH

<222> (16)..(21)

<223>

<220>

<221> THIOETH

<222> (19)..(22)

<223>

<400> 8

Phe Lys Xaa Trp Xaa Leu Xaa Xaa Pro Gly Xaa Ala Arg Xaa Gly Xaa 1 1 5 15

Phe Asn Xaa Tyr Xaa Xaa 20

<210> 9

<211> 22

<212> PRT

Corrected Seq. Listing.2004.08.31 <213> Streptococcus mutans <220> <221> MISC_FEATURE <222> (3)..(3) <223> alanyl moiety of lanthionine <220> <221> MISC_FEATURE <222> (7)..(7) <223> alanyl moiety of lanthionine <220> <221> MISC_FEATURE <222> (11)..(11) <223> alanyl moiety of lanthionine <220> <221> MISC_FEATURE <222> (16)..(16) <223> alanyl moiety of lanthionine <220> <221> MISC_FEATURE <222> (19)..(19)<223> alanyl moiety of lanthionine <220> <221> MISC_FEATURE <222> (21)..(21)

alanyl moiety of lanthionine

<220> <221> MISC_FEATURE (5)..(5) <222> <223> 2,3-didehydroalanine <220> <221> MISC_FEATURE <222> (8)..(8) <223> S-2-aminobutyric acid <220> <221> MISC_FEATURE <222> (14)..(14) <223> 2,3-didehydrobutyrine <220> <221> MISC_FEATURE (22)..(22) <222> <223> S-[aminovinyl]-cysteine <220> <221> THIOETH <222> (3)..(7) <223> <220> <221> THIOETH (8)..(11) <222> <223>

<220>

```
Corrected Seq. Listing.2004.08.31
<221>
       THIOETH
<222>
       (16)..(21)
<223>
<220>
<221>
       THIOETH
<222>
       (19)..(22)
<223>
<400> 9
Phe Lys Xaa Trp Xaa Phe Xaa Xaa Pro Gly Xaa Ala Arg Xaa Gly Xaa 1 5 10 15
Phe Asn Xaa Tyr Xaa Xaa
<210>
       10
<211>
       22
<212>
       PRT
<213>
       Streptococcus mutans
<220>
<222> (3)..(3)
<223> alanyl moiety of lanthionine
<220>
<221>
      MISC_FEATURE
<222>
      (7)..(7)
<223> alanyl moiety of lanthionine
<220>
```

<221>

MISC_FEATURE

<222> (11)..(11)

<223> alanyl moiety of lanthionine

<220>

<221> MISC_FEATURE

<222> (16)..(16)

<223> alanyl moiety of lanthionine

<220>

<221> MISC_FEATURE

<222> (21)..(21)

<223> alanyl moiety of lanthionine

<220>

<221> MISC_FEATURE

<222> (5)..(5)

<223> 2,3-didehydroalanine

<220>

<221> MISC_FEATURE

<222> (19)..(19)

<223> 2,3-didehydroalanine

<220>

<221> MISC_FEATURE

<222> (8)..(8)

<223> S-2-aminobutyric acid

<220>

<221> MISC_FEATURE

<222> (14)..(14)

<223> 2,3-didehydrobutyrine

```
<220>
<221>
      MISC_FEATURE
<222> (22)..(22)
<223> S-[aminovinyl]-cysteine
<220>
<221> THIOETH
<222>
      (3)..(7)
<223>
<220>
<221>
       THIOETH
<222>
      (8)..(11)
<223>
<220>
<221>
       THIOETH
      (16)..(21)
<222>
<223>
<220>
<221>
      THIOETH
       (19)..(22)
<222>
<223>
<400> 10
Phe Lys Xaa Trp Xaa Phe Xaa Xaa Pro Gly Xaa Ala Lys Xaa Gly Xaa 1 1 5 15
Phe Asn Xaa Tyr Xaa Xaa
<210> 11
```

<211> 22 <212> PRT <213> Streptococcus mutans <220> <221> MISC_FEATURE <222> (3)..(3) <223> alanyl moiety of lanthionine <220> <221> MISC_FEATURE <222> (7)..(7) <223> alanyl moiety of lanthionine <220> <221> MISC_FEATURE <222> (11)..(11)<223> alanyl moiety of lanthionine <220> <221> MISC_FEATURE (16)..(16)<222> <223> alanyl moiety of lanthionine <220> <221> MISC_FEATURE <222> (21)..(21)<223> alanyl moiety of lanthionine <220>

<221>

MISC_FEATURE

- <222> (5)..(5)
- <223> 2,3-didehydroalanine
- <220>
- <221> MISC_FEATURE
- <222> (8)..(8)
- <223> S-2-aminobutyric acid
- <220>
- <221> MISC_FEATURE
- <222> (14)..(14)
- <223> 2,3-didehydrobutyrine
- <220>
- <221> MISC_FEATURE
- <222> (22)..(22)
- <223> S-[aminovinyl]-cysteine
- <220>
- <221> THIOETH
- <222> (3)..(7)
- <223>
- <220>
- <221> THIOETH
- <222> (8)..(11)
- <223>
- <220>
- <221> THIOETH
- <222> (16)..(21)
- <223>

```
<220>
<221>
       THIOETH
       (19)..(22)
<222>
<223>
<220>
<221>
       MISC_FEATURE
<222>
       (19)..(19)
       alanyl moiety of lanthionine
<223>
<400> 11
Phe Lys Xaa Trp Xaa Phe Xaa Xaa Pro Gly Xaa Ala Lys Xaa Gly Xaa 1 1 5 15
Phe Asn Xaa Tyr Xaa Xaa
20
<210>
       12
<211>
       22
<212>
       PRT
<213> Streptococcus mutans
<400> 12
Phe Lys Ser Trp Ser Leu Cys Thr Pro Gly Cys Ala Arg Thr Gly Ser 1 10 15
Phe Asn Ser Tyr Cys Cys 20
```